

# 1.6 Pertussis

## Summary

Number of cases, 2010: 114  
 Number of cases, 2009: 78  
 Crude incidence rate, 2010: 2.7/100,000

One hundred and fourteen cases (2.7/100,000) of pertussis were notified in 2010 compared to 78 cases in 2009. Of the 114 cases in 2010 45 (39%) were classified as confirmed, 11 (10%) as probable and 58 (51%) were classified as possible.

In 2010, the largest number of cases (n=36, 32%) and the highest age-specific incidence rate (58.9/100,000) were in children aged less than one year with 27% (n=31) of all cases aged less than six months (figures 1 and 2). Sixty-two cases (54%) were female and 52 (46%) were male.

In Ireland it is recommended that children be vaccinated with an acellular pertussis-containing vaccine at two, four and six months of age and a booster dose at four to five years of age. The vaccine provides protection

in over 80% of children who are fully vaccinated. However, protection declines over time, with little or no protection 10-12 years after primary immunisation, if no booster doses are administered. In 2008 the National Immunisation Advisory Committee (NIAC) recommended a booster with low dose acellular pertussis vaccine for children aged 11-14 years. The adolescent booster dose will commence through the schools immunisation programme in the academic year of 2011-2012.

In 2010, the vaccination status was reported for 58 (51%) pertussis cases. Seventeen (n=17/114, 15%) cases were unvaccinated; these cases ranged in age from three weeks to 11 years, with 15 cases aged less than six months. Nine unvaccinated cases (n=9/17, 53%) were less than two months of age and were therefore not eligible for pertussis vaccine in the Irish schedule. Fifteen (n=15/114, 13%) cases were reported as incompletely vaccinated, but these included eight cases (n=8/15, 53%) who were less than six months of age and were therefore not eligible for three doses of pertussis vaccine in the Irish schedule. Twenty six (n=26/114, 23%) cases were reported as completely vaccinated for

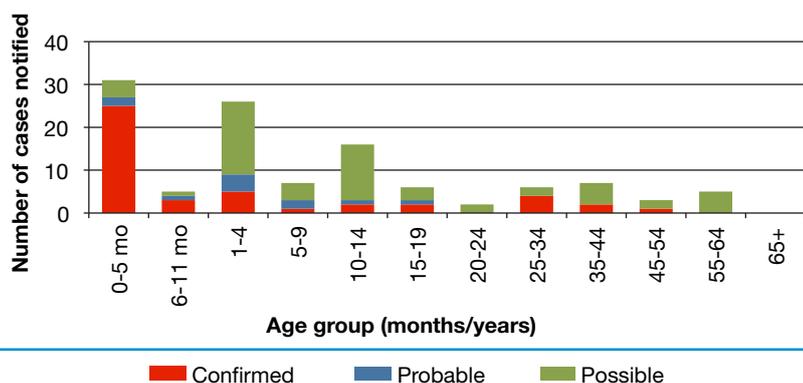


Figure 1. Number of notified pertussis cases in 2010 by age group and case classification. "Mo" in graph indicates months i.e. 0-5 months and 6-11 months, the remaining age groups are in years

their age; four of these were reported to have had three doses of pertussis vaccine, two were reported as having four doses while the number of doses was not specified for the remainder. Five of the 26 cases reported as completely vaccinated for their age were classified as confirmed.

Of the notifications in 2010, 65 (57%) were linked to a community outbreak in the HSE-NW. Of these 65 cases, seven were classified as confirmed, seven as probable and 51 as possible. The largest number of the cases in the outbreak were in the age groups 1-4 years (n= 16) followed by 10-14 years (n=15). The outbreak is described in detail in Eurosurveillance.<sup>1</sup> Three other localised outbreaks of pertussis were notified during 2010; all three were outbreaks in private houses with seven associated cases of illness in total.

Laboratory confirmation of pertussis is recommended, but it can be difficult to confirm the diagnosis as the sensitivity of the test is dependent on obtaining a nasopharyngeal aspirate or pernasal swab early on in the illness and rapid transfer to the hospital laboratory is required. Cultures are unlikely to be positive more than two weeks after onset of the catarrhal stage or one week after onset of cough or for more than a few days after commencing antibiotics. In Ireland laboratory confirmation is usually obtained by isolating the *Bordetella pertussis* organism through culture from nasopharyngeal aspirates or pernasal swabs. Increasingly PCR testing is being used to diagnose pertussis infection. Serology tests are not routinely done in Ireland. The establishment of a national pertussis reference laboratory would improve the quality of pertussis surveillance in Ireland and discussions have commenced to assess the feasibility of supporting this work.

The figures presented in this summary are based on data extracted from the Computerised Infectious Disease Reporting (CIDR) system on 28<sup>th</sup> October 2011. These figures may differ slightly from those published previously due to ongoing updating of notification data on CIDR.

#### References

1. Barret AS, Ryan A, Breslin A, Cullen L, Murray A, Grogan J, Bourke S, Cotter S. Pertussis outbreak in northwest Ireland, January – June 2010. *Euro Surveill.* 2010;15(35):pii=19654. Available online: <http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19654>

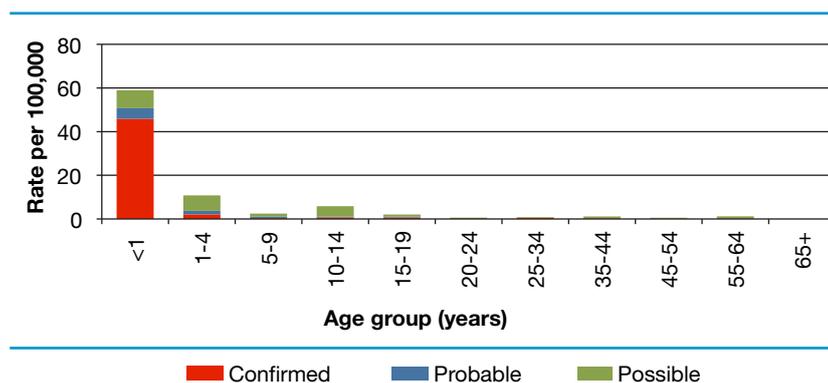


Figure 2. The age specific incidence rate (per 100,000 population) of notified pertussis cases in 2010 by case classification.